

REMARKS/ARGUMENTS

Favorable consideration of this application, as amended by Amendment filed April 30, 2008, and in light of the following discussion, is respectfully requested.

Claims 4-6, 10-12, 16 and 32-46 are presently pending in this application, Claims 1-3, 20 and 22-31 having been canceled, and Claims 4, 10, 16, 32, 33, 35, 36, 40, 41, 44 and 45 having been amended by the amendment.

In the outstanding Office Action dated November 2, 2007, Claims 1-4, 10 and 16 were objected to because of informalities; and Claims 1-6, 10-12, 16, 20 and 22-46 were rejected under 35 U.S.C. §103(a) as being unpatentable over Naruse et al. (U.S. Patent 5,914,187) in view of EP 0 361 883 (hereinafter “EP ‘883”).

Briefly, Claim 4 as amended by the amendment is directed to a honeycomb filter for purifying exhaust gases and recites, *inter alia*, “a plurality of columnar porous ceramic members...; and an adhesive layer combining said columnar porous ceramic members with one another and having a plurality of pores adjusting a thermal capacity per unit volume of said adhesive layer such that said thermal capacity per unit volume of said adhesive layer is lower than a thermal capacity per unit volume of the porous ceramic members.”

EP ‘883 describes attaining its intended coefficient of thermal expansion of the bonding material by adjusting its composition and adding a foaming agent into the bonding material to adjust the Young’s modulus.¹ However, it is respectfully submitted that these descriptions in EP ‘883 do not teach or suggest “a plurality of columnar porous ceramic members...; and an adhesive layer combining said columnar porous ceramic members with one another and having a plurality of pores adjusting a thermal capacity per unit volume of said adhesive layer such that said thermal capacity per unit volume of said adhesive layer is lower than a thermal capacity per unit volume of the porous ceramic members.” For

¹ See EP ‘883, page 3, lines 15-20.

instance, if the ceramic material has a higher porosity than the bonding material with pores formed by the pore forming agent, the thermal capacity per unit volume of the ceramic material would remain lower than that of the bonding material. Thus, it is not believed that the addition of the pore agent into the bonding material simply for adjusting the Young's modulus as described in EP '883 discloses or suggests the claimed thermal capacity relationship between the adhesive layer and the porous ceramic members (*i.e.*, "said thermal capacity per unit volume of said adhesive layer is lower than a thermal capacity per unit volume of the porous ceramic members.") as recited in Claim 4.

Moreover, Naruse et al. clearly states that one of the objects of its invention is "to improve the adhesion property and thermal conductivity of the sealing member ...," and that "the sealing member containing the inorganic particles has excellent thermal conductivity"² This is believed to be contrary to what EP '883 teaches or suggests. That is, EP '883 describes admixing a pore forming agent into the bonding material as discussed above, and thus the EP '883 bonding material would necessarily contain many pores or voids occupied by air, not inorganic particles as described by Naruse et al. And because air has significantly smaller thermal conductivity than that of inorganic particles or any other materials in the bonding material or sealing member, it would not improve but compromise the thermal conductivity of the sealing member. Thus, combining the teachings of EP '883 is believed to alter the principle of operation intended by Naruse et al.

Furthermore, regarding the thermal capacity per volume, the filter of Naruse et al. corresponds to Comparative Examples described in Applicants' specification, and as seen from the attached figures prepared based on Tables 6 and 9, because of the claimed feature (*i.e.*, "an adhesive layer combining said columnar porous ceramic members with one another

² See, for example, Naruse et al., column 3, lines 35-40, column 4, lines 15-62, column 5, line 60, to column 6, line 11.

and *having a plurality of pores adjusting a thermal capacity per unit volume of said adhesive layer such that said thermal capacity per unit volume of said adhesive layer is lower than a thermal capacity per unit volume of the porous ceramic members.*”), the exemplary filters of Examples 10-29 have significantly higher value of temperature rise than the filters of Comparative Examples.

Also, as discussed in the amendment, nowhere is Naruse et al. believed to mention or suggest the thermal capacity per unit volume of an adhesive layer and the thermal capacity per unit volume of porous ceramic members, nor is Naruse et al. believed to identify their thermal capacity per unit volume as a parameter for any improvement.

Based on the foregoing discussions, it is respectfully submitted that neither Naruse et al. nor EP ‘883 teaches or suggest “an adhesive layer combining said columnar porous ceramic members with one another and *having a plurality of pores adjusting a thermal capacity per unit volume of said adhesive layer such that said thermal capacity per unit volume of said adhesive layer is lower than a thermal capacity per unit volume of the porous ceramic members*” as recited in amended Claim 4 (emphasis added in italic). Nor are Naruse et al. and EP ‘883 believed to be combined to render the structure recited in Claim 4 obvious.

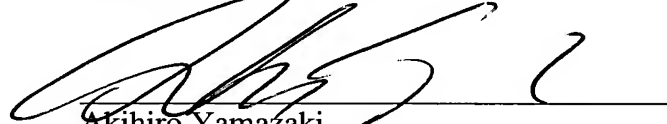
Claims 10 and 16 are believed to include subject matter substantially similar to what is recited in Claim 4 to the extent discussed above. Thus, Claims 10 and 16 are also believed to be distinguishable from Naruse et al. and EP ‘883.

For the foregoing reasons, Claims 4, 10 and 16 are believed to be allowable. Furthermore, since Claims 5-6, 11-15 and 32-46 depend directly or indirectly from one of Claims 4, 10 and 16, substantially the same arguments set forth above also apply to these dependent claims. Hence, Claims 5-6, 11-15 and 32-46 are believed to be allowable as well.

In view of the amendments and discussions presented above, Applicants respectfully submit that the present application is in condition for allowance, and an early action favorable to that effect is earnestly solicited.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read 'Akihiro Yamazaki', is written over a horizontal line.

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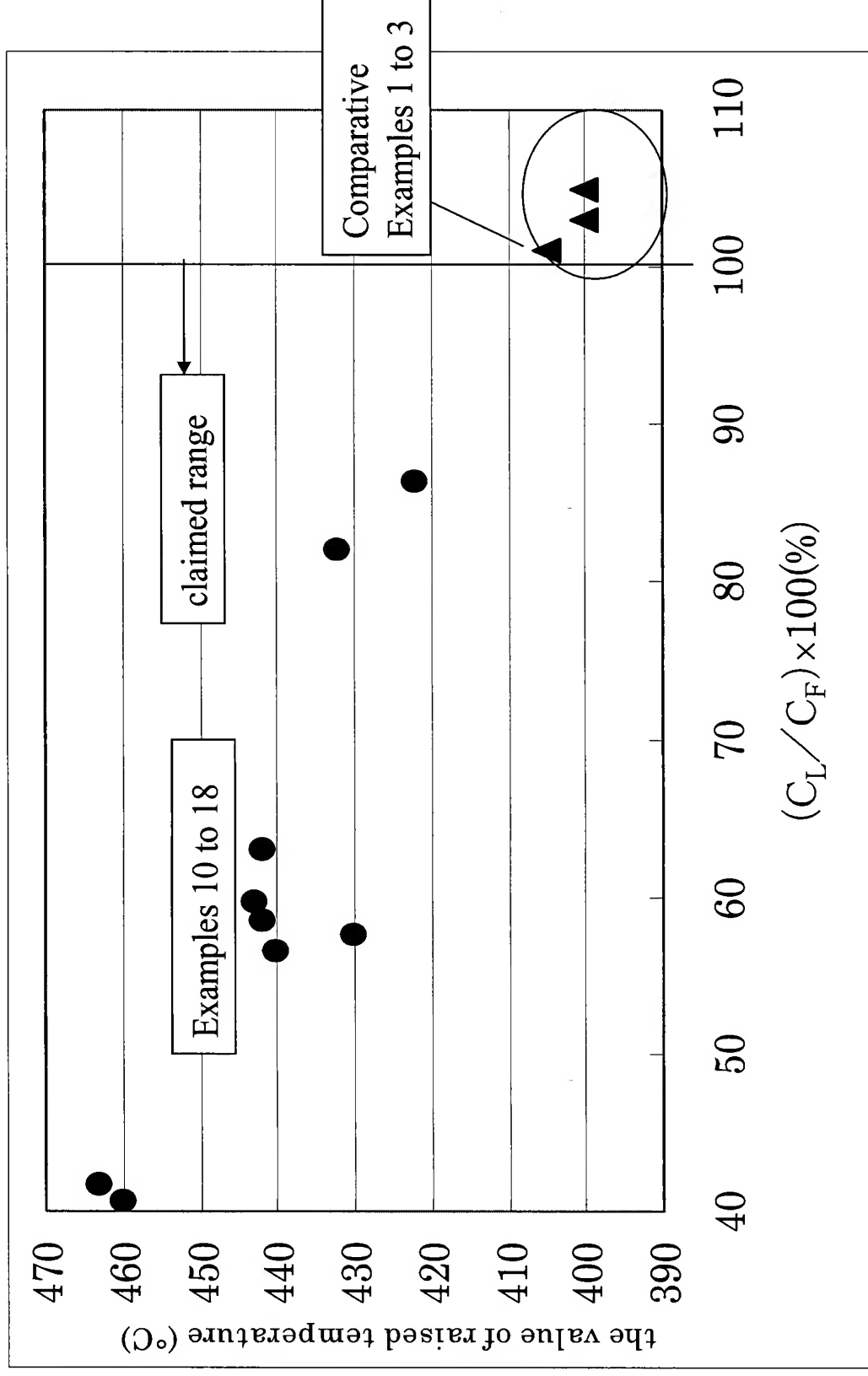
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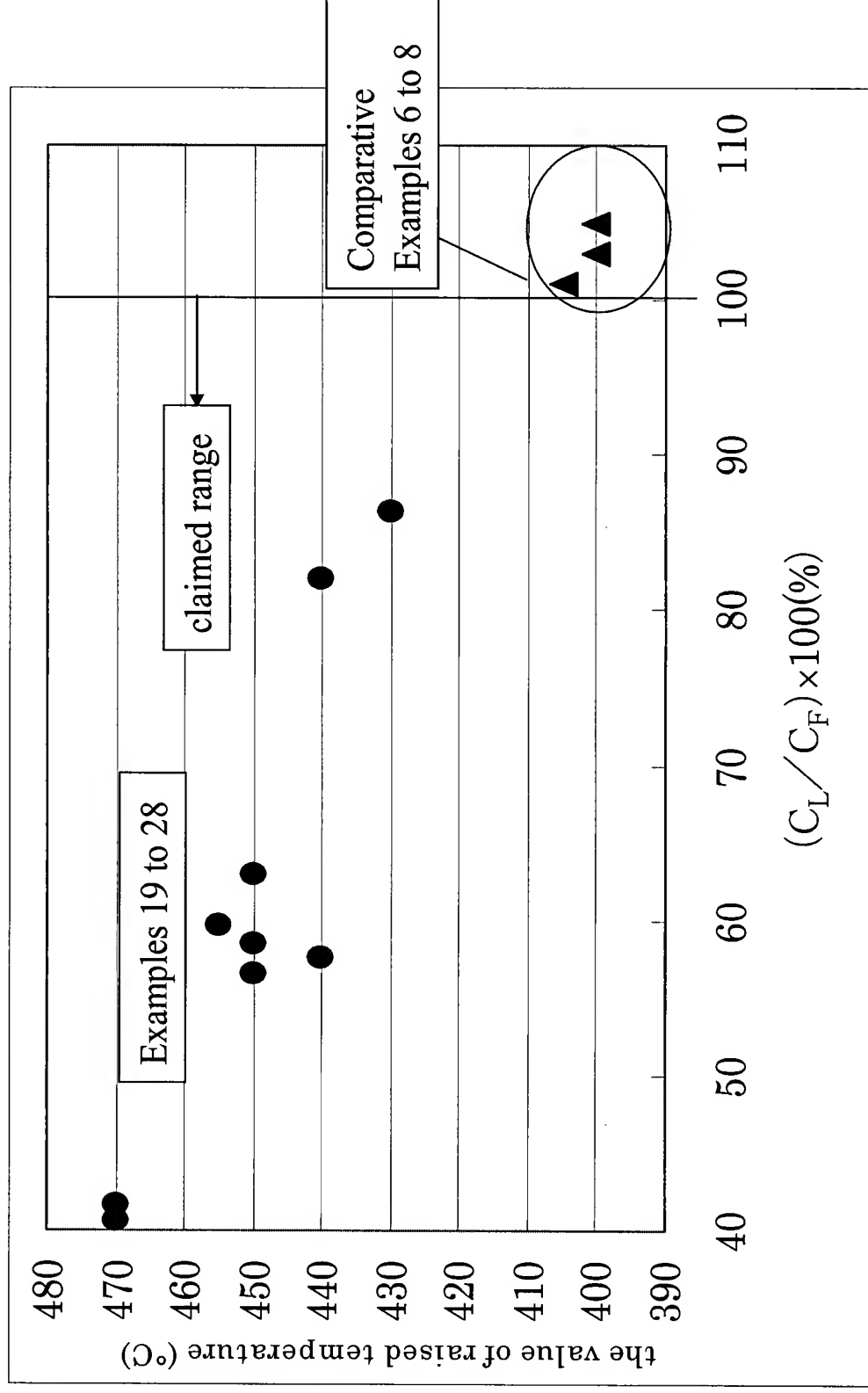
Attachment 1



C_L : thermal capacity per unit volume of the adhesive layer

C_F : thermal capacity per unit volume of the porous ceramic member

Attachment 2



C_L : thermal capacity per unit volume of the adhesive layer

C_F : thermal capacity per unit volume of the porous ceramic member